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PCB pollution: River trustees assess damage

By Tom Brosnan
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The Superfund law's "polluter pays" principle extends beyond cleanup of pollution, to include the restoration of natural resources injured by pollution. While the Environmental Protection Agency is supervising cleanup of the PCBs General Electric Co. released to the Hudson River, state and federal natural resource trustee agencies are working to assess past and future natural resource injuries and the value of services, such as recreational and subsistence fishing that the public has lost because of these injuries.

The trustees are the state Department of Environmental Conservation, the U.S. Department of Interior, and National Oceanic and Atmospheric Administration. These agencies will determine what type and amount of restoration is needed to provide appropriate compensation to the public for years of contamination of the Hudson River ecosystem by GE's PCBs.

In September 2002, the trustees issued a plan describing how injuries would be assessed. Some natural resource injuries can be demonstrated in a relatively straightforward way, because they are based directly on the degree of contamination. For example, for decades PCB levels in the Hudson River have routinely exceeded water quality criteria designed to protect aquatic life, fish-eating wildlife and human consumers of fish. PCB levels in fish have prompted extensive consumption advisories.

These documented excesses of water quality criteria, health advisories and fishing bans are considered injuries to surface water and fish as defined under Natural Resource Damage Assessment Regulations. The highly contaminated sediments that make up the Hudson's riverbed are injured because they are a source of contamination and resulting injury to water and fish.

Use of the river as a route of navigation, a service the Hudson River has historically provided, has been limited by riverbed PCB contamination. For example, New York has been unable to perform routine navigational dredging in the Champlain Canal portion of the river because of the added cost of dredging and disposing of PCB-contaminated sediment is many times more than dredging clean sediments. Accumulated contaminated sediment has blocked the passage of larger vessels through the canal since dredging stopped more than 25 years ago. The trustees are also investigating the increased future financial cost to the public for dredging and disposal of these contaminated sediments.

Establishing other natural resource injuries, such as biological effects on fish, birds, mammals and other wildlife, involves more detailed assessment work. Numerous laboratory tests and field studies at other sites indicate when PCBs reach certain levels in the bodies of living organisms, they can cause disease, reproductive dysfunctions, birth defects, changes in behavior, physical abnormalities, hormonal and biochemical alterations and death.

As a first step in the assessment, the Trustees collected information on the severity and extent of contamination in the Hudson River ecosystem. This effort confirms PCB contamination throughout riverine and floodplain habitats and food webs, with elevated PCB levels found in virtually every living creature studied to date in the vicinity of the Hudson River (see graphic).

The trustees are also conducting studies to assess the effects of PCBs on selected organisms - mink, birds and fish. Evidence of biological injuries is developed using field observations, laboratory and other studies, often over several years. Because these studies may be complex and time-consuming, an injury assessment has the potential to be a long and costly process.

Besides their assessment, the trustees have worked with the EPA to ensure Hudson dredging is performed in a manner that will protect natural resources, and that any adverse effects of dredging are minimized with appropriate reconstruction measures.

The trustees have invited General Electric to discuss how to further minimize or avoid injuries to habitats that may occur under the first phase of the remedy, as well as how to work cooperatively to assess injuries and conduct restoration planning. The trustees hope GE will work with them, which could considerably reduce the expense of the injury assessment, as well as the time the public must wait before this historic and nationally important river can be restored.

The trustees have encouraged public participation in the assessment and restoration process by holding public meetings, issuing fact sheets, and soliciting public input on draft study plans and proposed restoration projects.

Tom Brosnan is the Northeast Atlantic Branch Manager for the Office of Response and Restoration at the National Oceanic and Atmospheric Administration. This article was written in collaboration with the three Hudson River Trustee Agencies: the New York Department of Environmental Conservation, the National Oceanic and Atmospheric Administration and the U.S. Department of Interior.